DUBROVKIN, S., inzh.; LEBEDEV, I., inzh.

Fully precast sanitary-engineering blocks for thin-walled panel apartment houses. Na stroi.Mosk. 2 no.3:7-11 Mr '59. (MIRA 12:5)

(Moscow--Apartment houses) (Sanitary engineering) (Hot-water heating)

DUBROVKIN, S.D., inzh.; BRYUSHKOVA, O.A., inzh.

Prefabricated sanitary-engineering construction elements for housing construction. Gor.khoz.Mosk. 33 no.12:25-28 D '59.
(MIRA 13:3)

1. Rukovoditel' laboratorii sanitarno-tekhnicheskikh i elektromontazhnykh rabot Nauchno-issledovatel'skogo instituta Mosstroya (for Dubrovkin). 2. Glavnyy tekhnolog tresta "Mossantekhsttoya" No.1 Glavmosstroya (for Bryushkovo).
(Moscow--Sanitary engineering)
(Precast concrete construction)

BOGOMOLOV, D.F.; DUBROVKIN, S.D.; LEBEDEV, I.T.

Planning the installation of sanitary engineering systems in the
construction of residential buildings in Moscow. Vod.i san.tekh.
no.1:1-5 Ja '60. (MIRA 13:4)
(Moscow--Dwellings--Heating and ventilation)

KAGAN, D.F.; DUBROVKIN, S.D.

Investigation of temperature deformations of vinyl sewer pipes in apartment houses. Sbor.trud.MIIST no.8:82-101 '61.

(MIRA 15:5)

(Pipe, Plastic) (Sewer pipe)

DUBROVKIN, S.D., inzh.; BULYCHEV, G.G., doktor tekhn. nauk, nauchnyy red. SAVINOV, S.G., red.; KARPOVA, Ye.A., tekhn. red.

[Study of the characteristics of plastic pipe laying in water supply and sewer systems in apartment houses.] Issledovaniia osobennostei prokladki plastmassovykh truboprovodov v sistemakh vodosnabzheniia i kanalizatsii zhilykh zdanii, Moskva, Sviaz'izdat, 1961. 49p. (Moscow. Glavnoe upravlenie po zhilishchnomu i grazhdanskomu stroitel'stvu. Nauchnoe soobshchenie, no. 32). (MIRA 16:11)

DUBROVKIN, S.D., inzh.

Raise the industrial level and the efficiency of heating systems for large-panel residential buildings. Vod.i san.tekh. no.5:1-3 My '62. (MIRA 15:7)
(Heating) (Apartment houses)

DUBROVKIN, S.D., inzh.; CHISTYAKOV, N.N., inzh.

Semiautomatic welding of the pipes of sanitary-engineering systems. Vod. i san. tekh. no.8:12-15 Ag '62. (MIRA 15:9)
(Pipe, Steel—Welding)
(Sanitary engineering)

KAGAN, D.F.; BOKSHITSKIY, M.N.; DUBROVKIN, S.D.

Study of the fastening elements of interior plastic piping. Sbor. trud. NIIST no.12:66-83 '62. (MIRA 16:3)
(Pipe fittings) (Pipe, Plastic)

DUBROVKIN, Semen Davydovich, kand. tekhn. nauk; YARTSEV, N., red.;
SHLYK, M., tekhn. red.

[Innovations in sanitary engineering work] Novoe v sanitarno-tekhnicheskikh rabotakh. Moskva, Mosk. rabochii, 1963. 84 p. (MIRA 16:10)

1. Rukovoditel' laboratorii sanitarno-tekhnicheskikh rabot Nauchno-issledovatel'skogo instituta Glavnogo upravleniya po zhilishchnomu i grazhdanskomu stroitel'stvu v g. Moskve (for Dubrovkin).
(Sanitary engineering—Technological innovations)

DUBROVKIN, S.D., kand.tekhn.nauk

Operating indices of plastic pipes. Vod. i san. tekh. no.5:5-9
My '63. (MIRA 16:6)

(Pipe, Plastic)

BORSHCHOV, Dmitriy Yakovlevich, kand.tekhn. nauk; DUBROVKIN, Semen Davydovich, kand. tekhn. nauk; LEBEDEV, ~~Ivan Terent'yevich,~~ kand. tekhn. nauk; VOLNYANSKIY, A.K., inzh., nauchn. red.

[Sanitary engineering equipment in large-panel construction] Sanitarno-tekhnicheskie ustroistva v krupnopanel'nom stroitel'stve. Moskva, Stroiizdat, 1964. 150 p. (MIRA 18:3)

KAGAN, D.F., kand. tekhn. nauk; DUBROVKIN, S.D., kand. tekhn. nauk;
GOL'TSMAN, Sh.L., inzh.

Laying plastic pipelines inside buildings. Vod. i san. tekh.
no.6:21-26 Ja '64 (MIRA 18:1)

DUBROVKIN, S.D., kand.tekhn.nauk; YEKHLAKOV, S.V., kand.tekhn.nauk; MOSTINSKAIA, S.B., inzh.

Using electronic computers in the investigation of thermal processes of polyethylene pipe welding. Vod. i san. tekh. no.8:20-22 Ag '65. (MIRA 18:12)

AP5018044 UR 0191 [illegible]
678.743 [illegible] 415

22
B

[illegible] F. Dubrovkin, S. D.; Gol'terman, [illegible]

[illegible] joints of pipes of tough polyvinyl [illegible] strength

[illegible] cheskiye massy, no. 7, 1965, 65-69

[illegible] vinyl chloride pipe, plastic pipe [illegible] ring
[illegible], perchlorovinyl resin

[illegible] based on perchlorovinyl resin [illegible] itself
[illegible] joining polyvinyl chloride pipes [illegible] effect
[illegible] sition on the strength of joints [illegible] pipes
[illegible] advantage of adhesives prepared [illegible] hydro-
[illegible] xanone) is that parts can be joined [illegible] the
[illegible] simpler and less time-consuming [illegible] shearing
[illegible] constitutes one of the main types of [illegible] adhesive
[illegible] selected and the dimensions of the [illegible] are de-
[illegible] etical calculation of the shearing [illegible] ride pipe

P3018044

[illegible], and a brief review is given of [illegible] reported [illegible] art. has: 5 figures and [illegible]

None

ENCL [illegible] MT, IE

OTHER: [illegible]

[illegible], V. L. 6/1964 1964

[illegible]

ALIYEV, D.A.; ALIYEVA, S.G.; LOTKOVA, L.M.; DUBROVKO, R.V.

Investigating the thermal depolymerization of styrene tar.
Nefteper. i neftekhim. no.7:32-36 '63 (MIRA 17:7)

1. Bakinskiy zavod "Neftegaz".

EWP(j) Pc-4 RM

TR/0318

. A.; Aliyeva, S. G.; Dubrovko, R.

conversion and utilization of resin ... dehydrogenation

styrene

Pererabotka i neftekhimiya, no. 12, 196

styrene, benzene, dehydrogenation

a resin forms in the dehydrogenati
nt is 3.5-4% with reference to sty ... ting
thermal depolymerization were
lar weight of 405, stripped of ... a-
with 80% xylene or other hydrocar ... a
r finished insulating varnishes
samples drying time, but may still
of application in varnishes.
lar weight of 933 was separated from
treatment with gasoline, in which
er fraction proved a good materia
articles for industrial use. The

[illegible]

and had a high dielectric constant. [illegible] acids [illegible]ight-run gasoline, and alcohols, but [illegible] arbons. Orig. art. has 3 figures [illegible]

[illegible]skiy zavod "Neftegaz" (Neftegaz [illegible]

ENCL: 00 [illegible]

OTHER: 000

DUBROVNYY

DUBROVNYY, V.A., inzhener; LABUDEV, S.A., inzhener.

[redacted]

Graphic method for selecting systems of compounding and electromagnetic current correctors under normal conditions of generator operation. Elek.sta.28 no.7:56-59 Jl '57. (MIRA 10:9)
(Electric generators)

AUTHOR: Dubrovnyy, V.A., Engineer 91-58-8-26/34

TITLE: Checking the Efficiency of the Selenium Discs of Electromagnetic Voltage Correctors (Kontrol' ispravnosti selenovykh shayb elektromagnitnykh korrektorov napryazheniya)

PERIODICAL: Energetik, 1958, Nr 8, pp 32-33 (USSR)

ABSTRACT: The guaranteed working life of selenium rectifiers used in automatic voltage regulators is 5,000 - 10,000 hrs. At the end of a year it is recommended that they be replaced. The author made a study of the effect of corrosion on the rectifiers ' performance. By plotting the characteristics of rectifiers after different terms of service, and comparing the curves with the maker's characteristics, he found that deterioration in the rectifier's efficiency was indicated on a graph by a drop in the maximum and a shift to the left. He proposes that such a check be made of rectifiers every year to determine whether they are still serviceable. There is 1 graph and 1 Soviet reference.

1. Selenium rectifiers--Effectiveness 2. Voltage regulators --Equipment

Card 1/1

DUBROVNYY, V.A., inzh.

Forced excitation by relays using alternating operational current.
Elek.sta. 29 no.8:59-61 Ag '58. (MIRA 11:11)
(Electric generators)

DUBROVNYY, V.P. (Kiyev)

Choice of the parameters of a network for rectifying the scale of instruments working with logarithmic transducers. Avtomatyka 7 no.6:48-51 '62. (MIRA 16:1)

(Electric measurements) (Electric networks)
(Transducers)

ORLOV, I.V.; DUBROVNIY, V.P. [Dubrovnyi, V.P.]

Automatic device for indicating the termination of the steaming process for clothing goods with various moisture content. Leh. prom. no.3:3-7 Jl-S '63. (MIRA 16:11)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.

ORLOV, I.V.; DUBROVNYY, V.P.

Semiautomatic device indicating the termination of the steaming and pressing process of clothing with variable moisture content. Leh.prom. no. 4:3-8 O-D '63. (MIRA 17:5)

DUBROVO, I.A.

[redacted]

First find of the primitive elephant Elephas meridionalis Nesti in northern Siberia. Biul.Kom.chetv.per. no.19:76-79 '53.
(MLRA 7:11)

(Siberia, Northern--Elephants, Fossil) (Elephants, Fossil--Siberia, Northern)

DUBROVO, I A

DUBROVO, I.A.

First discovery of an ancient elephant in Trukmenia. Biul.
MOIP. Otd.geol.30 no.3:92 My-Je '55. (MLRA 8:10)
(Turkmenistan--Elephants, Fossil)

DUBROVO, I.A.

Remains of Parelephas wüsti (M.Pawl.) and Rhinoceros mercki Jäger from Yakutia. Biul. Kom. chetv. per. no.21:97-104 '57. (MIRA 10:6)
(Vilyuy Valley--Paleontology)
(Rhinoceros, Fossil) (Mammoth)

FENIKSOVA, V.V.; DUBROVO, I.A.

Terraces of the Yenisey Valley at the mouth of the Kan River and their geological age. Vest.Mosk.un.Ser.biol., pochv., geol., geog. 14 no.1:121-130 '59. (MIRA 12:9)

1. Moskovskiy gosudarstvennyy universitet, Kafedra istoricheskoy geologii.
(Yenisey Valley--Geology, Stratigraphic)

DUBROVO, Irina Aleksandrovna; GROMOVA, Vera, otv.red.; NIKITINA, O.G., red. izd-va; POLYAKOVA, T.V., tekhn.red.

[Ancient elephants of the U.S.S.R.] Drevnie slony SSSR. Moskva, Izd-vo Akad.nauk SSSR, 1960. 78 p. (Akademii nauk SSSR. Paleontologicheskii institut. Trudy, no.1). (MIRA 13:11)

(Elephants, Fossil)

DUBROVO, I.A.

Find of the teeth of Archidiskodon meridionalis (Nesti) in Kazakhstan. Mat. po ist. fauny i flory Kazakh. 3:58-61 '61.
(MIRA 14:7)

(Pyatoryzhskoye region—Elephants, Fossil)
(Teeth)

DUBROVO, I.A.

New data on Late Cenozoic mammals of Tajikistan. Paleont.
zhur. no.2:155 '63. (MIRA 16:8)

1. Paleontologicheskiy institut AN SSSR.
(Tajikistan—Mammals, Fossil)

DUBROVO, I.A.

Anancus arvenensis (Croizet et Jobert) from the Taman' Peninsula.
Biul.Kom.chetv.per. no. 28:158-161 '63. (MIRA 17:5)

DUBROVO, I.A.; ALEKSEYEV, M.N.

Stratigraphy of Quaternary sediments in the region of the Sea of Azov. Biul. Kom. chetv. per. no.29:35-43 '64. (MIRA 17:8)

DUBROVO, I.A.

Taxonomic status of "Elephas vüsti." Paleont. zhur. no.4:
95-102 '63. (MIRA 17:1)

1. Paleontologicheskiy institut AN SSSR.

DUBROVO, I.A.

New data on the Taman fauna complex of vertebrates. Biul. MOIP. Otd. geol. 38 no.6:94-99 N-D '63. (MIRA 17:8)

DUBROVO, I.A.

Elephants of the genus Archidiscodon in the U.S.S.R. Paleont. zhur. no.3:82-94 '64. (MIRA 18:2)

1. Paleontologicheskiy institut AN SSSR.

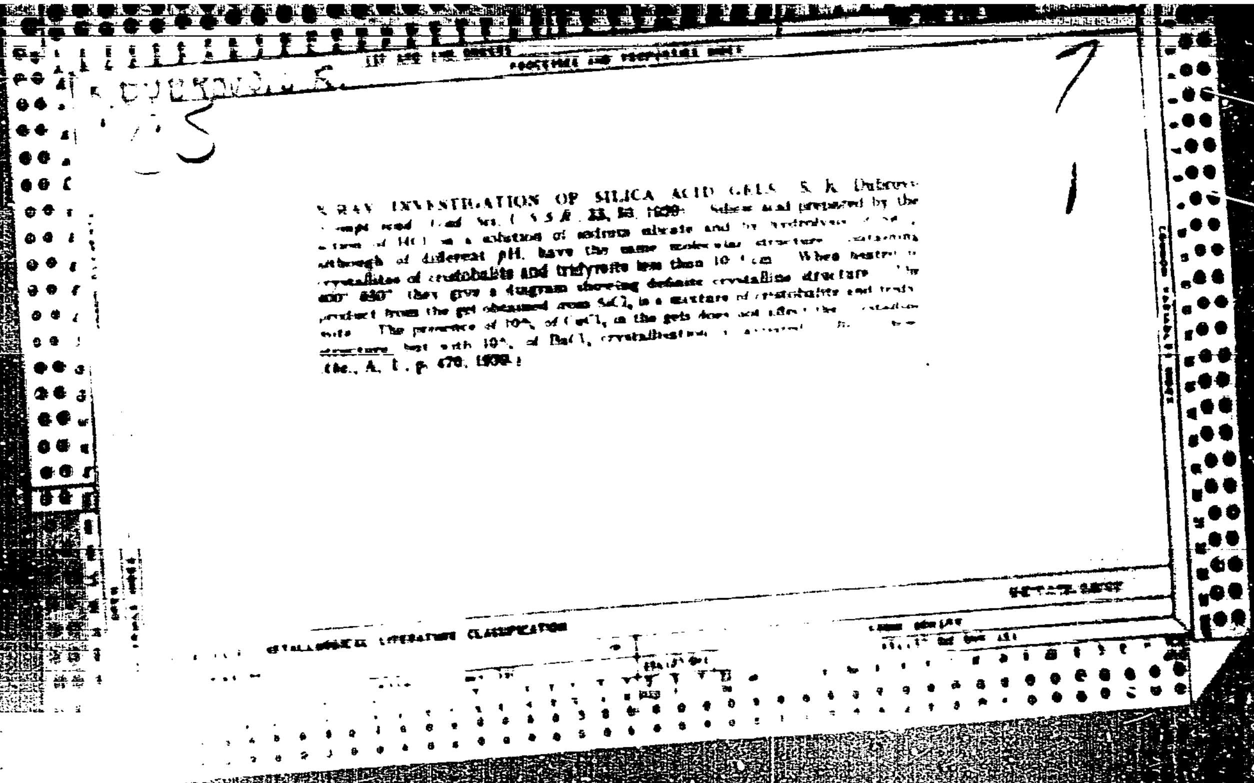
DUBROVO, I.A.

Existence of Protelephas planifrons in the U.S.S.R. Soob. AN Grus. SSR 34 no.3:599-603 Je '64 (MIRA 18:1)

1. Institut paleobiologii AN Gruzinskoy SSR. Submitted July 17, 1963.

DUBROVO, I.A.; BAYGUSHEVA, V.S.

Elephants of the Khapry fauna complex according to the materials of the Liventsovsk quarry. Biul. MOIP. Otd.geol. 39 no.5:133-136 S-O '64. (MIRA 18:2)



Dubrovo, S.

25

7

1

PROCESSES AND PROPERTIES INDEX

X-RAY INVESTIGATION OF SILICA ACID GELS. S. K. Dubrovo (Compt. rend. Acad. Sci. U.S.S.R., 23, 53, 1939). Silicic acid prepared by the action of HCl on a solution of sodium silicate and by hydrolysis of [illegible], although of different pH, have the same molecular structure, containing crystallites of cristobalite and tridymite less than 10^{-6} cm. When heated to 600°–650° they give a diagram showing definite crystalline structure. The product from the gel obtained from $SiCl_4$ is a mixture of cristobalite and tridymite. The presence of 10% of $CaCl_2$ in the gels does not affect the crystallization [illegible] structure, but with 10% of $BaCl_2$ crystallization is accelerated. [illegible]

Che., A, I, p. 470, 1939.)

METALLURGICAL LITERATURE CLASSIFICATION

DUBROVO, S.K.

A C.S.

Study of the quality of high voltage insulator glass by the method of chemical silvering. S. K. Dubrovo. *Zhur. Priklad. Khim.*, 17 (1-2) 30-34 (1944).—Chemical silvering of glazed porcelain represents a sort of indicator for the microstructure of its fire-polished surface. The silvering method permits characterization of the state of the surface, the precise classification of the various types of glasses, and the study of the chemical resistance of glass solution to strong alkalis.

DVERKOV, A.K. 19

[illegible] were tested by three [illegible] by the method of [illegible] 6, 2347 with the depth of the [illegible] as a criterion. In each case, comparative test [illegible] made on a fresh fracture, [illegible] the same [illegible] heat treatment, and [illegible] a new fracture of the [illegible]. The surface areas tested were [illegible] heat treatments at [illegible]

[illegible] improvement of [illegible] beginning with [illegible] compared with [illegible] after heat treatments beginning with [illegible] 400 and 300° resp. [illegible] 300° below [illegible] the relative improvement [illegible] increases with further increasing [illegible]. The effect depends strongly on the length of the heat treatment with [illegible] at 300° in 0.5, 2, 7, and 24 hrs. [illegible] = ~1, 1.5, 2 (max.), and 1.66, resp.; rapid heating by introduction into a preheated furnace results in less [illegible]

[illegible] improvement [illegible] distance [illegible] the open [illegible] treatment [illegible] with H₂ [illegible] has [illegible] any beneficial effect; the [illegible] the heat [illegible] rather in a slight lowering [illegible] former pretreatment [illegible] hrs. The improvement of [illegible] in the case of [illegible] standing of the improved [illegible] hrs. [illegible] contrary to [illegible] after heat treat[illegible]

[illegible] surface [illegible] considerably pro[illegible] longer heat treatment [illegible] at 300° [illegible] process takes place resulting in [illegible]. Thus along with the improvement effect [illegible]

METALLURGICAL LITERATURE CLASSIFICATION

DUBROVO, S.K.

CA

Chemical stability of feldspars in acid solutions. S. K.
Dubrovo (Inst. Silicate Chem., Acad. Sci. U.S.S.R.).
Zhur. Obshchei Khim. **20**, 45-53; *J. Gen. Chem. U.S.S.R*
20, 47-55(1950)(English translation); cf. Grebenshchikov,
Izvest. Akad. Nauk S.S.S.R. 1941, No. 1; Correns and
Engelhardt, *C.A.* **33**, 91⁹.—The thickness of the decompn.
layers on the surface of acid-treated feldspars was detd.
by the measurement of changes of the elliptical polariza-
tion of reflected light (Drude's theory and method), ac-
cording to the formula $d = \lambda\varphi/\pi\sqrt{n^2 + 1}\,(n + 1/n -$
1), for the wave length 5461 A., φ the angle of ellipticity,
and n the refractive index. The instrument used was
Timofeev's polarization spectrometer (*Zhur. Eksptl.*
Teoret. Fiz. **6**, No. 1(1936)). The investigated feldspars
were: albite (with 1.04% anorthite, 7.46% SiO_2 and
H_2O excess); microcline (with 0.86% anorthite, 64.10%
$KAlSi_3O_8$, 35.17% albite); oligoclase (13.38% anorthite,
83.58% albite). The crystals were cut parallel to the
3 pinacoids, and polished. The initial layer thickness
was only 20 A. Microcline and oligoclase glasses were
also examd. The decompn. of the glasses was also studied
by conductometric methods after grinding to a powder of
20 to 70 μ grain diam. and treating in 0.001 *N* HCl at 25°.
In this case, the thickness of the decompd. layer is given
by $h = (\kappa_0 - \kappa_t)2000v/ap$, with κ_0 and κ_t the specific
conductance of the soln. at the beginning, and after the
time t, p the powder surface, v the vol. of the liquid, and
a = percentage of oxide/100 × equiv. weight. The

soln. contained Na_2O and CaO; only the alkalies and Ca
were detd. for a in the equation. The ellipticity of the re-
flected light was measured with the pinacoidal samples,
polished, and treated at const. 40° with either 0.5 *N* HCl
and H_2SO_4, or 0.5% acetic acid, for different periods of
time. The reaction layers are films of a silica-alumina
hydrogel, with a considerably reduced n. The curves
which represent the growth in thickness of these layers
with time show a rapid slowing-down by the inhibited
diffusion of the reagent through the reaction films. The
leaching amts. are highest for (100) of oligoclase; the
thickness of the film is, e.g., after 23 days in 0.5 *N* HCl:
280 A. on (100), 140 A. on (010). H_2SO_4 reacts slightly
more rapidly than HCl. The lower stability of the (100)
face is explained from the more open structure of the
feldspar framework (Schiebold). The glasses of the
feldspars have a higher chem. stability against the acid
corrosion than the open structures of the crystal phases.
Albite is much more stable than the plagioclases against
HCl, and the same is true of microcline. On both alkali
feldspars practically no reaction films were measured,
even after 140 days. The slight reaction products which
are observed also on microcline are not indicated by the
elliptical polarization method, and are evidently brought
about by a slight plagioclase content of the microcline.
Org. acids (acetic and oxalic acid) act less intensely than
the mineral acids. While the acid leaching methods con-
cern only the cations in the structure of the feldspars,
different phenomena may be expected if the aluminosili-
cate skeleton of the framework structure is affected by the
W. Eitel
solvent.

DUBROVO, S. K.

6 3

Effect of silicic acid on the determination of aluminum in solutions by the 8-quinolinol method. S. K. Dubrovo. *J. Appl. Chem. U.S.S.R.* 25, 1213-17(1952)(Engl. translation). See *C.A.* 47, 2640*d*. H. L. H

BARZAKOVSKIY, V.P.; DUBROVO, S.K.; KELER, E.K., professor, redaktor;
SMOLENSKIY, G.A., kandidat tekhnicheskikh nauk, redaktor.

[Physicochemical properties of high voltage porcelain glazes]
Fiziko-khimicheskie svoistva glazurei vysokovol'tnogo farfora.
Moskva, Izd-vo Akademii nauk SSSR, 276 p., 1953 (MLRA 6:12)
(Glazes) (Electric insulators and insulation)

DUBROVO, S. K.

Reaction of vitreous sodium silicates and sodium aluminosilicates with aqueous solutions. Reaction of vitreous sodium silicates with [illegible] acid solutions. [illegible]

9-1-54

5

①

1473. **The influence of silica on the determination of aluminium by the 8-hydroxyquinoline method.** S. E. [illegible] ([illegible], 1953, 4, 310). The accuracy of the 8-hydroxyquinoline method of determining Al has been investigated when as much as four times the amount (by weight) of SiO_2 as Al_2O_3 is present. Results are satisfactory when the SiO_2 is in molecular soln., but not if polymerised SiO_2 is present. With SiO_2 to Al_2O_3 ratios greater than 4 to 1, results are 3-0 per cent. too high and pre-treatment with *N* NaOH soln. is recommended.

R. J. W.

DUBROVO, S.K.

In memory of Academician Il'ia Vasil'evich Grebenshchikov: obituary. Izv. AN SSSR. Otd.khim.nauk no.4:581-586 Jl-Ag '53. (MLRA 6:8)
(Grebenshchikov, Il'ia Vasil'evich, 1887-1953)

DUBROVO, S. K.

3

②

13658* (Interaction of Vitreous Silicates and Sodium Aluminosilicates With Aqueous Solutions.) Vzaimodeistvie stekloobraznykh silikatov i aliumosilikatov natriia s vodnymi rastvorami. II. (Interaction With Aqueous Solutions of Sodium Bisilicate.) Vzaimodeistvie s vodnymi rastvorami steklobraznogo bisilikata natriia. Ia. A. Shmidt. III. (Effect of Silica and Aluminum Oxide in the Composition of Sodium Silicates on Their Decomposition in Acids.) Vliianie soderzhaniia kremnezema i okisi aliuminiia v sostave silikatov natriia na ikh razrushaemost' v kislotakh. S. K. Dubrovo. *Izvestiia Akademii Nauk SSSR, Otdelenie Khimicheskikh Nauk* 1954, no. 2, Mar.-Apr., p. 238-252. Includes graphs, tables. 10 ref.

[illegible]

[illegible]

DUBROVO, S.K.

USSR/Chemical Technology -- Chemical Products and Their Application. Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1567

Author: Dubrovo, S. K.

Institution: Academy of Sciences USSR

Title: Susceptibility to Attack by Aqueous Solutions of Silicate and Sodium Aluminum Silicate Glasses as a Function of the Silica Content of the Glass

Original Periodical: Sb.: Stroyeniye stekla, Moscow-Leningrad, Academy of Sciences USSR, 1955, 181-184

Abstract: See also Referat Zhur - Khimiya, 1955, 14518.

[illegible] greater [illegible] the rate of [illegible]

DUBROVO,S.K.; SHMIDT,Yu.A.

Interaction of vitreous sodium silicates and aluminosilicates
with aqueous solutions. Report no.6. Interaction of vitreous
sodium silicates and aluminosilicates with alkali solutions.
Izv.AN SSSR. Otd.khim.nauk no.3:403-410 My-Je '55.
(MLRA 8:9)

1. Institut khimii silikatov Akademii nauk SSSR
(Silicates) (Alkalies)

DUBROVO, S.K.; SHMIDT, Yu.A.

Interaction of vitreous sodium silicates and aluminosilicates with aqueous solutions. Report no.7. Interaction of vitreous sodium silicates and aluminosilicates with salt solutions. Izv.AN SSSR.Otd.khim.nauk no.4:603-610 Jl-Ag '55. (MLRA 9:1)

1. Institut khimii silikatov Akademii nauk SSSR.
(Sodium silicates) (Glass manufacture--Chemistry)

Physicochemical chara[illegible] [illegible]
[illegible]
[illegible]
[illegible] of [illegible]
and resistance of [illegible]
glass of the [illegible]

[illegible] in chemical [illegible]

[illegible]

[illegible]

[illegible] glass tubing and hand drawn [illegible]

[illegible] glass using B_2O_3 [illegible]

[illegible] MgO [illegible] increase [illegible]

[illegible] glass to alkaline and [illegible] increase (1) [illegible]

[illegible] are added [illegible]

The effect of [illegible]

[illegible]

AUTHOR: ~~Dubrovo, S. K.~~ SOV/62-58-10-1/25

TITLE: The Interaction Between Vitreous Sodium Silicates and Aluminum Silicates With Aqueous Solutions (Vzaimodeystviye stekloobraznykh silikatov i alyumosilikatov natriya s vodnymi rastvorami)
Communication 8: The Effect of Acid Solutions on Vitreous Sodium-Aluminum Silicates With Variable Oxygen Number (Soobshcheniye 8. Deystviye rastvorov kislot na stekloobraznyye alyumosilikaty natriya s menyayushchimsya kislorodnym chislom)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 10, pp 1157-1164 (USSR)

ABSTRACT: Various papers were published which contain contradicting informations with regard to the effect of the change of the number of moles of aluminum on the resistance to acids of silicates (Refs 3-4, 6-7). In a previous paper (Ref 5) the author discussed the investigations of the resistance to acids of vitreous sodium-aluminum silicates in connection with the different types of compounds contained in the glass. In the present paper the author investigated the reaction of 4 series of silicate glasses of the following structures:

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The Interaction Between Vitreous Sodium Silicates SOV/62-58-10-1/25
and Aluminum Silicates With Aqueous Solutions.
Communication 8: The Effect of Acid Solutions on Vitreous Sodium-Aluminum
Silicates With Variable Oxygen Number

$Na_2O \cdot Al_2O_3 \cdot 2SiO_2$, $Na_2O \cdot Al_2O_3 \cdot 3SiO_2$, $Na_2O \cdot Al_2O_3 \cdot 4SiO_2$ and $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$, with the same number of moles of natrium oxide and the same ratio of the number of moles of Al_2O_3 to SiO_2 having been maintained in each series. The resistance to acids of the glasses of the feldspat type does not change with the simultaneous change of the oxygen number. The chemical stability of the glasses of the jadeite series and of that of the type 1:1:3 increases with an increase of the oxygen number; the higher the oxygen number of the sodium-aluminum silicate glasses the smaller is the effect exerted by the change of the number of moles of sodium monoxide on the destructability of the glasses by acid solutions. There are 3 figures, 3 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR
(Institute of Silicate Chemistry of the Academy of Sciences, USSR)

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5(2) SOV/80-32-4-7/47

AUTHORS: Dubrovo, S.K., Shmidt, Yu.A.

TITLE: Physical-Chemical Properties of Glass-Like Silicates and Alumosilicates of Lithium (Fiziko-khimicheskiye svoystva stekloobraznykh silikatov i alyumosilikatov litiya)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 742-749 (USSR)

ABSTRACT:

Lithium compounds are used in many silicate materials. The physical properties of glass-like silicates and lithium alumosilicates, like density and refraction index, are investigated here. Lithium-silicate glasses with $Li_2O:SiO_2$ ratios of 1:1 and 1:3 are melted at temperatures of 1,300°C, those with ratios of 1:4 and 1:5 at 1,450-1,500°C. All of these glasses are less viscous than the corresponding sodium glasses. In the system Li_2O-SiO_2 were obtained glasses with a lithium oxide content of 16.7 to 50 molar-%, and in the system $Li_2O-Al_2O_3-SiO_2$ glasses with a content of 16.7 to 32.8 molar-% and an aluminum oxide content of 1.6 to 25 molar-%. The refraction index is determined by the immersion method with an error of ±0.003, the density by the method of hydrostatic weighing. The lithium

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Physical-Chemical Properties of Glass-Like Silicates and Alumosilicates of Lithium

silicates and alumosilicate glasses have a higher refraction index and a lower density compared to analogous sodium glasses. The density curve of lithium silicate glasses reaches a maximum at a SiO_2 content of 58-63 molar-%. The increase of the silica content in the glasses raises the molar volume and reduces the refraction of the oxygen ion. It is assumed that aluminum in the glasses is quadricovalent [Ref 14]. There are 4 graphs, 4 tables and 14 references, 3 of which are Soviet, 6 English, 3 American, 1 German and 1 French.

SUBMITTED: April 28, 1958

Card 2/2

5(2) SOV/80-32-5-8/52

AUTHOR: Dubrovo, S.K.

TITLE: The Action of Acid Solutions on Glass-Like Lithium Silicates

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 979-983 (USSR)

ABSTRACT: The chemical destruction of glass-like silicates by aqueous solutions is determined by the state of silica in the glass, the concentration of the hydrogen ions of the solution, the character of the reaction products on the surface of the glass etc. The reaction is regarded as an exchange of sodium ions of the glass for hydrogen ions of the solution. The destruction of lithium silicates in acidic solutions is studied here and compared with the chemical resistance of sodium silicate glasses. The $Li_2O:SiO_2$ ratio varied from 1:1.4 to 1:5. Solutions of 0.1 and 1 n hydrochloric acid were used. In the high-silica glasses the transition of lithium oxide into the solution decreased with the time. An increase beyond 70 mole-% does not further decrease the rate. The dissolution of silica is very insignificant and amounts in the unstable glass with the ratio 1:1.4 to 0.2% only. A higher concentration of the acidic solution increases the destruction of the glass. A layer of hydrated silica which contains 16% of water

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The Action of Acid Solutions on Glass-Like Lithium Silicates

is formed on the surface of the glass at the ratio 1:1.4. The data shows that lithium silicates have a higher acid resistance than sodium silicates of the same composition. The ion radius in lithium silicates is 0.78 Å, in sodium silicates 0.98 Å and in potassium silicates 1.33 Å. The force of attraction therefore is higher in lithium, which together with the dense packing of lithium glasses explains their higher chemical resistance.
There are: 2 graphs, 2 tables and 4 references, 2 of which are Soviet and 2 English.

SUBMITTED: July 4, 1958

Card 2/2

Dubrovo S.K.

AUTHOR: Syritskaya, Z. M.

S/072/60/000/03/021/025
B005/B008

TITLE: 3rd All-Union Conference on the Vitreous State

PERIODICAL: Steklo i keramika, 1960, Nr 3, pp 43-46 (USSR)

ABSTRACT: The 3rd All-Union Conference on the Vitreous State was held in Leningrad at the end of 1959. It was organized by the Institut khimii silikatov AN SSSR (Institute of the Chemistry of Silicates AS USSR), Vsesoyuznoye khimicheskoye obshchestvo imeni D. I. Mendeleyeva (All-Union Chemical Society imeni D. I. Mendeleyev) and Gosudarstvennyy opticheskiy institut imeni S. I. Vavilova (State Optical Institute imeni S. I. Vavilov). More than 100 reports on the structure of glass, investigation methods of the vitreous state, the mechanism of vitrification and physicochemical and technical properties of glasses were delivered. The Conference was opened by Academician A. A. Lebedev. . . .

At the 7th meeting, 6 reports dealt with glasses as semiconductors, 9 with the coloring of glasses and the influence of radiation and 4 reports with technical properties of glasses. . . . . V. V. Vargin and T. I. Veynberg, "Coloring of Glasses in Connection With Their Structure". N. V. Vlasova, Yu. L. Lifshits. A. A. Kefeli, "Absorption Spectrum of the Co2+ Ion as Indicator for the Coordination of Boron and Aluminum in Glasses". V. P. Pusilov and N. V. Burbach reported on the change of the spectral absorption of glasses of simple composition under the influence of gamma rays. G. O. Karapetyan reported on the influence of the structure of glasses on spectral and chemical properties of the Ce-ions. N. V. Orlov reported on the role of the admixtures and the crystalline state of the lattice in the coloring of quartz glass by gamma radiation. A. B. Blyumen and B. L. Shmeter reported on the physicochemical nature of pore formation in silicate melts (foam glass, ceramsite). Ye. V. Yermolayeva reported on physico-chemical investigations of melts of refractory oxides in a state of equilibrium. I. F. Ponomarev, "The Importance of the Vitreous Phase in the Formation of the Ceramic Body and the Cement Clinker". V. A. Presnov reported on the physico-chemical fundamentals of the fusing of glass and metal. The 8th meeting dealt with physical chemistry and mechanical properties of glass. K. S. Yevstrop'yev, G. M. Bartenev and S. K. Dubrovo made comprehensive reports. A. A. Appen reported on the fundamental structural parameters which determine the properties of the glass. A. V. Gladkov, V. A. Batabyl'skaya, V. V. Tarasov reported on research results of the polymeric structure of inorganic glasses. L. I. Demkina reported on peculiarities of the expansion of oxides in silicate glasses. V. S. Slavyanskiy reported on the subject: "The Energy of Covalent Bonds in Glass and Their Role in the Process of the Viscous Flux". Z. M. Syritskaya reported on physico-chemical properties of aluminophosphate glasses. Yu. A. Shmidt reported on the dependence of the properties of alkali silicate glasses on the composition. N. N. Shcheglova reported on: "Investigation of the Dependence of the Optical Properties of Phosphate Glasses on the Composition". A. K. Yakhkind reported on the subject: "The Periodic System and the Optical Constants of Glass". N. S. Aslanova reported on: "Mechanical Properties of Glass Fibers". G. M. Bartenev, A. S. Yermarova made a report on the mechanical properties of inorganic glasses in the anomalous interval and on their structure. Yu. I. Koslovskaya reported on the elastic properties of glasses and on the influence of the composition of the glasses on their mechanical properties. A. V. Akopyan reported on the subject: "Leaching of Molten Glasslike Basalts by Aqueous Solutions of Acids and the State of the Oxides in the Structure of Glass Basalts". S. N. Brekhovskikh and V. N. Sazonova reported on synthesis and investigation of hafnium silicate glasses. A. I. Dubrova reported on physico-chemical properties of gallium silicate glasses. V. A. Dubrovskiy and V. S. Dubrovskaya reported on the surface film forming on calcium-sodium glass in the acidic, neutral and basic medium. The following persons reported at the final meeting: V. F. Kokorina on the influence of the alkaline earth oxides on the chemical stability of glasses in a humid atmosphere; L. Ya. Mazelev on vitrification and properties of borate glasses; B. P. Nikol'skiy, Ye. A. Materova and V. V. Moiseyev on the function of electrode glasses with solutions. Doctor Vogel and Boetger spoke as guests from Eastern Germany. Academician N. V. Belov, M. A. Bezborodov, I. I. Kitaygorodskiy, and D. K. Kolar also spoke at the final meeting.

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15:2100

77496
SOV/80-33-1-5/49

AUTHOR: Dubrovo, S. K.

TITLE: Action of Alkali Solutions Upon Glassy Silicates and Lithium Aluminosilicates

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 27-34 (USSR)

ABSTRACT: Decomposition of glassy lithium silicates $Li_2O \cdot 1.4SiO_2$ to $Li_2O \cdot 5SiO_2$, of sillica powders (hydrated and tempered silica, fused quartz glass, quartz), and of lithium aluminosilicate glasses in solutions of NaOH and LiOH was investigated in this work. Action of acids upon the glassy lithium silicates was studied earlier (Zhurnal priklad. khim., 32, 5, 979 (1959)). Experiments were performed at 40° in silver apparatus on 110-140 mesh glass powders. Dissolved glass components were analyzed colorimetrically (see loc. cit.; and Izvest. Akad. nauk, otdel. khim. nauk,

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3, 403 (1955)). It was shown that (1) decomposition of lithium silicates in 0.1N NaOH and LiOH becomes less intensive with increasing content of SiO_2 in $Li_2O \cdot ySiO_2$; (2) all glassy lithium silicates and lithium aluminosilicates are more stable than the corresponding sodium glasses, which were studied earlier (Dubrovo, S. K., Shmidt, Yu. A., Izvest. Akad. nauk SSSR, otdel. khim. nauk, 3, 403, (1955)) under identical conditions; this is explained by the more compact structure of the former; (3) glassy lithium (as well as sodium) silicates and silica powders are more stable in solutions of lithium hydroxide than in NaOH (due to the weaker basicity of the former), while decomposition of glassy lithium aluminosilicate is slower in sodium hydroxide solutions; (4) decomposition of lithium aluminosilicates in LiOH decreases with increasing molar ratio SiO_2/Al_2O_3, while in NaOH the change in the SiO_2/Al_2O_3 ratio does not change the

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degree of decomposition. This fact explains the more intensive decomposition of lithium aluminosilicates in LiOH, compared to NaOH; (5) solubility rate of silica powders in NaOH decreases in the order: hydrated silica tempered silica fused quartz glass quartz; increasing temperature of tempering lower solubility; increase of NaOH concentration increases solubility of silica powders. It was noted that, due to selective leaching of Al-ions by mineral acids and subsequent dissolution of SiO_2, decrease in solubility of lithium aluminosilicate with increasing ratio SiO_2/Al_2O_3 is much higher in acids than in alkaline solutions. There are 6 figures; 3 tables; and 4 Soviet references.

SUBMITTED: July 2, 1959

Card 3/3

DUBROVO, S.K.

PHASE I BOOK EXPLOITATION SOV/[illegible]

Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 3d, Leningrad, 1959.

Steklooobraznoye sostoyaniye; trudy Tret'yego vsesoyuznogo soveshchaniya Leningrad, 16-20 noyabrya 1959 (Vitreous State; Transactions of the Third All-Union Conference on the Vitreous State, Held in Leningrad on November 16-20, 1959) Moscow, Izd-vo AN SSSR, 1960. 534 p. Errata slip inserted. 3,200 copies printed. (Series: Its: Trudy)

Sponsoring Agencies: Institut khimii silikatov Akademii nauk SSSR. Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva and Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova.

Editorial Board: A.I. Avgustinik, V.P. Barzakovskiy, M.A. Bezborodov, O.K. Botvinkin, V.V.Vargin, A.G. Vlasov, K.S. Yevstrop'yev, A.A. Lebedev, M.A. Matveyev, V.S. Molchanov, R.L. Myuller, Ye.A. Poray-Koshits, Chairman, N.A. Toropov, V.A. Florinskaya, A.K. Yakhkind; Ed. of Publishing House: I.V. Suvorov; Tech. Ed.: V.T. Bochever.

PURPOSE: This book is intended for researchers in the science and technology of glasses.

COVERAGE: The book contains the reports and discussions of the Third All-Union Conference on the Vitreous State, held in Leningrad on November 16-19, 1959. They deal with the methods and results of studying the structure of glasses, the relation between the structure and properties of glasses, the nature of the chemical bond and glass structure, and the crystallochemistry of glass. Fused silica, mechanism of vitrification, optical properties and glass structure, and the electrical properties of glasses are also discussed. A number of the reports deal with the dependence of glass properties on composition, the tinting of glasses and radiation effects, and mechanical, technical, and chemical properties of glasses. Other papers treat glass semiconductors and soda borosilicate glasses. The Conference was attended by more than 300 delegates from Soviet and East German scientific organizations. Among the participants in the discussions were N.V. Solomin, Ye. V. Kuvshinskiy, Yu.A. Gastev, V.P. Pryanishnikov, Yu. Ya. Gotlib, O.P. Mchedlov-Petrosyan, G.P. Mikhaylov, S.M. Petrov, A.N. Lazarev, D.I. Levin, A.V. Shatilov, B.T. Ploshchinskiy, A.Ya. Kuznetsov, N.V. Degtyareva, G.V. Byurganovskaya, A.A. Kalinov, M.M. Shcherbakov, P.Ya. Bokin, E.K. Keller, Ya.A. Kuznetsov, V.P. Pozdnev, R.S. Shevelevich, Z.G. Pinsker, and O.S. Molchanova. The final session of the Conference was addressed by Professor I.I. Kitaygorodskiy, Honored Scientist and Engineer, Doctor of Technical Sciences. The following institutes were cited for their contribution to the development of glass science and technology: Gosudarstvennyy opticheskiy institut (State Optical Institute), Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AS USSR), Fizicheskiy institut AN SSSR (Physics Institute AS USSR), Fiziko-tekhnicheskiy institut AN SSSR (Physicotechnical Institute AS USSR), Institut fiziki AN BSSR, Minsk (Institute of Physics, Academy of Sciences, Belorusskaya SSR, Minsk), Laboratory of Physical Chemistry of Silicates of the Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk (Institute of General and Inorganic Chemistry, Academy of Sciences, Belorusskaya SSR, Minsk), Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds, AS USSR), Gosudarstvennyy institut stekla (State Institute for Glass), Gosudarstvennyy institut steklovolokna (State Institute for Glass Fibers), Gosudarstvennyy institut elektrotekhnicheskogo stekla (State Institute for Electrical Glass), Sibirskiy fiziko-tekhnicheskiy institut, Tomsk (Siberian Physicotechnical Institute, Tomsk), Leningradskiy gosudarstvennyy universitet (Leningrad State University), Moskovskiy khimiko-tekhnologicheskiy institut (Moscow Institute of Chemical Technology), Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institut imeni Lensovet), Belorusskiy politekhnicheskiy institut Minsk (Belorussian Polytechnic Institute, Minsk), Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnic Institute), and Sverdlovskiy politekhnicheskiy institut (Sverdlovsk Polytechnic Institute). The Conference was sponsored by the Institute of Silicate Chemistry AS USSR (Acting Director - A.S. Gotlib), the Vsesoyuznoye khimicheskoye obshchestvo im. D.I. Mendeleyeva (All-Union Chemical Society imeni D.I. Mendeleyev), and the Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I. Vavilova (State "Order of Lenin" Optical Institute imeni S.I. Vavilov). The 15 resolutions of the Conference include recommendations to organize a Center for the purpose of coordinating the research on glass, to publish a new periodical under the title "Fizika i khimiya stekla" (Physics and Chemistry of Glass), and to join the International Committee on Glass. The Conference thanks A.A. Lebedev, Academician, Professor, and Chairman of the Organization of Committee; Ye.A. Poray-Koshits, Doctor of Physics and Mathematics, Member of the Organizational Committee; and R.L. Myuller, Doctor of Chemical Sciences, Member of the Organizational Committee. The editorial board thanks G.M. Bartenev, M.V. Vol'kenshteyn, L.I. Demkina, D.P. Dobychin, S.K. Dubrovo, V.A. Ioffe, and D.T. Kolomiyets. References accompany individual reports.

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02665
S/080/60/033/007/002/020
A003/A001

152120

AUTHORS: Dubrovo, S. K., Lileyev, I. S.

TITLE: Glass-Like Gallo-Silicates and Their Properties

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1471-1476

TEXT: The possiblity of obtaining glasses 15 in simple gallosilicate systems was investigated and the dependence of their physico-chemical properties on the content of gallium oxide in them was studied. Three-component glasses were prepared: $Na_2O-Ga_2O_3-SiO_2$, $Li_2O-Ga_2O_3-SiO_2$ and $CaO-Ga_2O_3-SiO_2$. The melting was carried out in a platinum crucible at 1,460-1,500°C. The glasses containing gallosilicates are less inclined to crystallization than the corresponding alumosilicate glasses. It was shown that the density of the glasses increases if the molar percentage of gallium oxide in it is increased at the expense of silicon dioxide or sodium oxide. The density of gallosilicate glasses is considerably higher than that of alumosilicate glasses. The refractive index depends mainly on the ratio between silica and gallium oxide. The refractive index increases with the content of gallium oxide. The average dispersion attains its highest value at the ratio $SiO_2:Ga_2O_3 = 3$. The highest refractive

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82665

Glass-Like Gallo-Silicates and Their Properties

S/080/60/033/007/002/020
A003/A001

index is obtained in gallosilicate glasses containing lithium oxide. The linear thermal expansion was studied with the aid of a dilatometer of the ГИКИ (GIKI) type within the range of 20-400°C. The addition of gallium oxide to sodium-silicate glasses decreases their expansion coefficient. The micro-hardness increases with the content of gallium oxide and aluminum oxide. Gallosilicate glasses, however, have a microhardness which is by 17-23% lower than that of alumosilicate glasses. There are 5 tables, 4 graphs and 5 references: 1 Soviet, 3 English and 1 American.

SUBMITTED: February 17, 1960

Card 2/2

DUBROVO, S. K.

Action of aqueous solutions on glassy dosium gallosilicates. Zhur. prikl. khim. 33 no.9:1986-1992 S '60. (MIRA13:10)
(Gallium oxide) (Sodium oxide) (Glass--Corrosion)

31972
S/081/61/000/023/041/061
B138/B101

15.2120

AUTHOR: Dubrovo, S. K.

TITLE: Chemical properties of glasses

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 343, abstract 23K275 (Sb. "Stekloobrazn. sostoyaniye." M. - L., AN SSSR, 1960, 418-423. Diskus., 446)

TEXT: The influence of Ga on the physicochemical properties of vitreous silicates has been investigated. Ranges of glass formation have been revealed in simple gallosilicate systems. The properties of Na-Li-Ca gallosilicate glasses have been investigated and compared with alumosilicate glasses of similar composition. Comparison of the physicochemical properties of the gallo- and alumo-silicates of sodium shows that in silicates Ga acts in a manner similar to Si. Gallosilicate glasses differ from the corresponding alumosilicate ones in that they have less tendency to crystallization. This makes the glass formation range of the system $Na_2O - Ga_2O_3 - SiO_2$ wider than that of $Na_2O - Al_2O_3 - SiO_2$. Gallosilicate glasses have higher refractive indices, greater density and

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31972

Chemical properties of glasses

S/081/61/000/023/041/061
B138/B101

less chemical stability than their alumosilicate counterparts. [Abstracter's note: Complete translation.]

X

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DUBROVO, S.K.

Coefficient of the thermal expansion of gallosilicate and aluminosilicate glasses in dependence on their composition. Zhur. prikl.khim. 35 no.1:47-51 Ja '62. (MIRA 15:1)

(Glass manufacture—Chemistry)
(Expansion (Heat)) (Silicates)

S/080/62/035/002/018/022
D204/D302

AUTHORS: Dubrovo, S. K. and Kefeli, A. A.

TITLE: Problem of the coordination of Ga and Al in glass-forming silicates

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 2, 1962, 441-443

TEXT: A study of the coordination numbers of Ga in five simple glasses containing Na_2O, Ga_2O_3 and SiO_2 and of Al in 2 glasses composed of Na_2O, Al_2O_3 and SiO_2, motivated by the almost complete absence of data in this field. A spectrophotometric method was employed, adding 0.1% of NiO (by weight) to each glass, to act as an indicator by virtue of the formation of either a blue $[NiO_4]$ or a yellow $[NiO_6]$ complex. It is assumed that the coordination numbers of Ga or Al correspond to those of Ni^{2+}. Absorption spectra in the 400 - 700 mμ region were observed, by measuring the optical density

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of glasses (in 1 mm thicknesses) in relation to the $\frac{R_2O_3}{Na_2O}$ ratio (n). It was found that in the gallosilicate glasses, the coordination number of Ga was 6 when n = 1.66, but absorption bands corresponding to $[NiO_4]$ appeared when n was reduced to 1.0 - 0.60. Similar results were obtained for the aluminosilicates, but the tendency towards tetrahedral coordination appeared greater than in the case of Ga. There are 3 figures, 1 table and 9 Soviet-bloc references.

SUBMITTED: May 15, 1961

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25[illegible]

S/080/62/035/003/020/024
D204/D302

15.2120

AUTHORS: Dubrovo, S. K., Lileyev, I. S., Mozheyko, V. I. and Shmidt, Yu. A.

TITLE: Glasses with increased heat stability for chemical laboratory ware and apparatus

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 3, 1962, 669-671

TEXT: The object of the present work was to prepare low-borate glasses with increased thermal shock resistance, applicable to the above uses. The range of compositions tried was (wt.%): SiO_2 72.5 - 75.0, Al_2O_3 6.0 - 7.8, B_2O_3 3.2 - 4.0, BaO 5.0, CaO 0 - 1.7, Na_2O 5.0 - 7.8, Li_2O 0.5 - 1.0, CaF_2 0 - 2.5. BaO may be replaced by SrO. The glasses were fused at 1500 - 1520°C and their coefficients of linear thermal expansion (α), softening temperature, tendency towards crystallization and chemical stability were measured. Two of these glasses, AT-24 (SiO_2 75.0, Al_2O_3 8.0, B_2O_3 3,2,

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S/080/62/035/003/020/024
D204/D302

Glasses with increased ...

BaO 4.8, CaF_2 1.7, Na_2O 6.8 and Li_2O 0.5) and ВТ-24 (VT-24) (SiO_2 72.6, Al_2O_3 6.8, B_2O_3 4.0, BaO 5.0, CaO 0.5, CaF_2 2.5, Na_2O 7.8, Li_2O 0.75) were prepared on a larger scale in the Druzhnaya Gorka glassworks and were there shaped into articles. It was found that $\alpha_{20-400^\circ C}$ was 53-60 x $10^{-7}/^\circ C$ [Abstracter's note: cm/°C?], the softening temperatures were ~570°C and there was no tendency towards devitrification. The glasses were stable to distilled water and 1N H_2SO_2 on prolonged boiling, but less so to 2N NaOH. All At-24 ware withstood quenching through 170°C, whilst VT-24 was only slightly less shock resistant. Thermal shock resistance was thus superior to that of glass no. 23 and 29 produced at the D.G. works and to Ц-32 (Ts-32) glass. The same physico-chemical tests were carried out on commercial glasses for comparison. The results are briefly discussed and it is concluded that the glasses developed are suitable for production of chemical glass ware and appa-

Card 2/3

S/080/62/035/003/020/024
D204/D302

Glasses with increased ...

ratus. There is 1 table and 2 Soviet-bloc references.

SUBMITTED: May 30, 1961

Card 3/3

DUBROVO, S.K.; SHNYPIKOV, A.I.; Prinimali uchastiye: MOZHEYKO, V.I.; RYZHOVA, L.G.

Glasses stable in alkaline solutions for chemical laboratory articles. Zhur. prikl. khim. 36 no.8:1633-1637 Ag '63.
(MIRA 16:11)

[illegible] EWT(m)/EWP(t)/EWP(b) [illegible]

BOOK EXPLOITATION

[illegible] Konstantinovna

[illegible]um silicates; their properties and field [illegible] Stekloob-
[illegible] IIIlye, ikh svoystva i oblast' [illegible] Moscow-Lenin-
[illegible] Nauka, 1964. 73 p. illus., biblio. [illegible]
[illegible]: Akademiya Nauk SSSR. Institut [illegible] im. I. V.
[illegible]. Editor of the publishing house: [illegible]; TECHNICAL
[illegible] N. Kondrat'yeva; Proofreader: N. A. Shilova.

[illegible] silicate, lithium oxide, vitreous [illegible], lithium
[illegible]

[illegible]: This book provides valuable informa[illegible] scientific
[illegible]structors in the silicate faculties of vuzes, and engineers in the
[illegible]. Literature material and the author's own [illegible] results are
[illegible] clarifying the role of lithium oxide in [illegible] glasses. Basi-
[illegible] possibility of obtaining glasses in various [illegible] silicate systems
[illegible] and the physical-chemical properties of two- [illegible] multicomponent

silicates are described. The problem of [illegible] com-
duction of new glass-crystalline materials – [illegible] electrode
[illegible] glasses – is discussed.

[illegible]:

of vitrefication and crystallization in [illegible] systems

-chemical properties of vitreous [illegible]

perties - - 27
of thermal expansion - - 32
properties - - 41
ility - - 47
and surface tension of lithium-silicate melts [illegible]
trial silicate glasses containing lithium [illegible]

72

SUBMITTED: 14Jan64

ACCESSION NR: AP4009526 S/0072/64/000/001/0013/0016

AUTHORS: Dubrovo, S.K.; Skorik, Yu. I.

TITLE: The effect of the chemical treatment of glass surface on the glass properties

SOURCE: Steklo i keramika, no. 1, 1964, 13-16

TOPIC TAGS: glass, coated glass, glass properties, hydrophobicity, organosilicon compound, hydrofluoric acid, dimethyl dichlorosilane

ABSTRACT: Glass surfaces were treated with organosilicons to determine its effect on the properties of glass, such as its hydrophobic nature, mechanical and flexural strength, abrasion strength, and resistance to chemicals. The mechanical and flexural strength of both igneo-polished glass and glass preliminarily hardened with hydrofluoric acid was not appreciably affected by an organosilicon coating. By treating glass with 3% dimethyl dichlorosilane at room temperature and subsequently drying it at 120 C, a sufficient degree of hydrophobicity was imparted so that it will remain

Card 1/2

ACCESSION NR: AP4009526

unchanged during storage. Heating up to 550 C destroys the organosilicon film. Abrasion tests using sand flow on a glass surface showed that glass hardened in hydrofluoric acid loses its mechanical strength. Samples treated at room temperature with a dimethyl dichlorosilane solution have 1.5 times higher strength than the untreated samples. The testing process and device are described. Orig. art. has 4 tables.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 03Feb64 ENCL: 00

SUB CODE: MA, CH NO REF SOV: 005 OTHER: 001

Card 2/2

[illegible] EWT(a)/EWP(b) [illegible]

[illegible] AP5001137 S/0291 [illegible] 0025

[illegible] S. K.; Kasymova, S. S.

[illegible] stability of glasses of the Na_2 [illegible]

[illegible] khimicheskiy zhurnal, no. 4, [illegible]

[illegible] SrO SiO_2 system, acid [illegible] stron-
[illegible] glass, barium containing glass [illegible]

[illegible] tions of glasses of the Na [illegible] 1N
[illegible] tions were compared with those [illegible] Ba-
[illegible] The compositions studied [illegible] and
[illegible] SrO. The acid and alkali [illegible] increas-
[illegible] silica content. The acid resist [illegible] with
[illegible] radius of the alkaline earth [illegible] was
[illegible] silica content was increased [illegible] of
[illegible] intermediate to that of the Ca [illegible] silica

DUBROVO, S.K.; KASYMOVA, S.S.

Region of vitrification and properties of glasses in the system Na_2O - SrO - SiO_2. Report No.1. Uzb.khim.zhur. 8 no.1:14-19 '64. (MIRA 17:4)

1. Institut khimii silikatov AN SSSR i Institut khimii AN UzSSR.

ACCESSION NR: AP4040522 S/0080/64/037/006/1222/1227

AUTHOR: Dubrovo, S. K.; Tsekhomskaya, T. S.

TITLE: Vitreous lithium gallosilicates

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 6, 1964, 1222-1227

TOPIC TAGS: lithium gallosilicate glass, sodium gallosilicate glass, lithium silicate glass, lithium aluminosilicate glass, glass formation, glass crystallization, glass physical property

ABSTRACT: Certain previously discovered favorable characteristics of gallosilicate glasses as compared to aluminosilicate glasses prompted a study of glass formation and crystallization in the $Li_2O-Ga_2O_3-SiO_2$ system. Glasses containing Li_2O 7—40, Ga_2O_3 5—35, and SiO_2 40—90 mol% were synthesized. Glasses with a $Ga_2O_3 : Li_2O$ ratio higher than 1 are singled out because analogous aluminosilicate glasses could not be prepared. The region of glass formation and crystallization is shown in the triangular phase diagram. The density d, the refractive index n, the volume containing 1 at·g ofoxygen V_0, and

Cord 1/2

ACCESSION NR: AP4040522

the coefficient of linear thermal expansion were determined for various glass compositions in the system and compared with the corresponding data for sodium gallosilicate or lithium silicate glasses. The V_0 values decrease with increasing Li_2O content, and increase with increasing Na_2O content, while the n values increase with increasing R O[R = Na, Li] content in both sodium and lithium gallosilicate glasses with the same SiO_2 : Ga_2O_3 ratios. The effect of Ga_2O_3 substitution for SiO_2 is to increase the coefficient of linear thermal expansion in low-alkali glasses and to decrease it in high-alkali glasses. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 17Dec63 DATE ACQ: 06Jul64 ENCL: 00

SUB CODE: MT NO REF SOV: 013 OTHER: 001

Cord 2/2

[illegible] 35 R [illegible]

566 [illegible]

[illegible] and thermal stability of [illegible]

[illegible] Neorganicheskie [illegible]

[illegible] expansion coefficient [illegible] silicate [illegible] glass

[illegible] of thermal expansion [illegible]
[illegible] and R_2 [illegible] R_2 [illegible]
[illegible] components of the glass. [illegible]
[illegible] alumina [illegible]
glasses depending upon the [illegible]
[illegible] the relative alkali content [illegible]
[illegible] the increase of the expa [illegible]
[illegible] the expansion coefficient [illegible]
[illegible] in the glass. The [illegible] [illegible] xide

[illegible]

glasses [illegible] uses the [illegible]
[illegible] glasses [illegible]
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[illegible]

range

[illegible]

L 32961-66

ACC NR: AP6016926

period. Tables are given showing the relative resistance of chemical laboratory glass to alkaline solutions. DG-3 glass surpasses all commercial chemical laboratory glass in resistance to alkaline solutions, and particularly to mixtures of sodium hydroxide and soda. DG-3 glass satisfies all GOST requirements for water resistance and acid resistance. This standard covers glass category XV-1, first class chemical stability. DG-3 forms good joints with No. 29, 23 and molybdenum glass.[15] Orig. art. has: 4 figures, 2 tables.

SUB CODE: 07, 11 SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 001

Card 2/2

L 07419-67 EWP(e)/EWT(m) WH

ACC NR: AP6030777 SOURCE CODE: UR/0363/66/002/009/1652/1657

AUTHOR: Dubrovo, S. K.; Shnypikov, A. D.

23
B

ORG: Institute of Silicate Chemistry im. I. V. Grebenshchikov, Academy of Sciences, SSSR (Institut khimii silikatov Akademii nauk SSSR)

TITLE: Some properties of glasses in the $Na_2O-La_2O_3-SiO_2$ system

15

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 9, 1966, 1652-1657

TOPIC TAGS: silicate glass, lanthanum oxide, glass property

ABSTRACT: The purpose of the study was to identify the region of vitrification in the $Na_2O-La_2O_3-SiO_2$ system and to determine the effect of lanthanum oxide on some properties of sodium silicate glasses. The region of vitrification was determined by melting mixtures of various compositions and observing them in the holes of a platinum foil. The content of the components was within the following limits: SiO_2, 51-92%; La_2O_3, 1-16%; Na_2O, 5-48%. As the La_2O_3 content of the glasses rises, the temperature of the start of softening, refractive index and density increase in all cases. Introduction of La_2O_3 in place of Na_2O into sodium silicate glasses causes their coefficient of thermal expansion to decrease. A partial replacement of SiO_2 by La_2O_3 in low-alkali glasses (up to 20% Na_2O) causes an increase in the expansion coefficient. The latter decreases upon introduction of La_2O_3 in place of SiO_2 in glasses containing

Card 1/2 UDC: 666.01